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EXAMINER

FAULK, DEVONA E

| ART UNIT | PAPER NUMBER |
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2644

DATE MAILED: 05/19/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/593,924

Applicant(s)

CHRISOP ET AL.

Examiner

Devona E. Faulk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Paper No.6, filed 3/9/04, with respect to **claims 1- 7** have been fully considered but they are not persuasive.

Regarding **claim 1**, on page 7, lines 13-17, the applicant asserts that "As amended, claim 1 requires that the speaker characteristics are transmitted from the speakers to the transmitter. It should be noted that the 'speaker system' of claim 1 does not include the amplifier 10". The examiner respectfully disagrees. The claim language as written does not specify either of the applicant's assertions. The rejection is therefore maintained.

Regarding **claim 2**, on page 7, lines 19-24, the applicant asserts that "a major difference is that the communications module is located at the speaker, not at the amplifier/transmitter of Law". The claim language does not read on this assertion. The RF modulator does transmit information from the speaker system to the amplifier. Therefore, the rejection is maintained.

Regarding **claim 3**, on page 9, lines 13-18, the applicant asserts that claim 3 depends on claim 1 and that there is no communication module in the speaker communicating back to the transmitter of Law. The claim language does not read on the applicant's assertion and thus the rejection is maintained.

Regarding **claim 4**, on page 11, lines 1-10, the applicant asserts that with regards to claim 1, that Law does not teach the elements of this claim. The applicant also asserts that the combination of Law and Konno "taken as a whole, does not teach a speaker system that communicates back to the amplifier". Further, rectification of an AC signal is not the same as rectification of a carrier signal to provide power". As stated above, with regards to claim 1, Law

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does read on the claim language. Konno does teach of speaker transmitting characteristics back to an amplifier. As written, the claim language of claim 4 does not specifically teach of the applicant's assertions. Therefore, the rejection is maintained.

Regarding **claim 5**, on page 8, lines 1-8, the applicant asserts that while the RF modulator has an impedance, it is not necessarily a feature of a modulator to have a high impedance to avoid placing a load on a speaker. The examiner maintains her assertion that impedance is an inherent feature of a modulator and it is well known that impedance is used to avoid placing a load a speaker. Therefore, the rejection is maintained.

Regarding **claim 6**, on page 8, lines 9-16, the applicant asserts, on page 8, that "Law does not teach using amplitude modulations from the speaker system to the amplifier, or the use of low-tone modulation or phase-shift keying". Claim 6 claims that the communication module communicates via 'one of' the group and this has been interpreted that only one of the group is needed. Law teaches of CVSD modulation, which may be a form of amplitude modulation. The applicant further asserts that Law's communication module not being located in the speaker system, as taught in the invention, but the claim language of claim 6, as written, does not speak to the applicant's assertion that the communication module is located in the speaker system. Therefore, the rejection is maintained.

Regarding **claim 7** on page 11, lines 11-18, the applicant asserts Law does not teach all of the elements of the base claims 1 and 9 that Zupert does not teach any communication from the speakers to the amplifier. The claim language, as is, does not speak to communications from the speakers to the amplifier. It speaks to a communication module that transmits information from the speaker system to the amplifier. Law's transmitter reads on that claim language.

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Zuquert discloses a two-way wireless speaker system comprising transmitting units (Figure 10; column 20, line 62-column 21, line 13) that transmit control messages and the control messages are transmitted on a separate frequency band from the digital audio transmissions. The combination meets the claim language. Therefore, the rejection is maintained.

Regarding **claim 8**, on page 9, lines 20-24, the applicant asserts that Law does not show the receiver communicating with the transmitter and that a frequency band overlapping another is not the same as using the same frequency band. Law does show communication between a transmitter and a receiver. The applicant's disclosure does not clearly define overlapping. Therefore, the rejection is maintained.

Regarding **claims 15 and 16**, on page 8, lines 17-page 9, line 10, the applicant has asserted, on page 8, that "The speaker characteristics transmitted in the instant invention are static characteristics that may only be transmitted once" and that the "characteristics of the speaker are characterized as being 'hardware' characteristics not related to ambient noise" (top of page 9). As written, the claim language does not clearly state the applicant's assertions. Neither does it state what is meant by static or characteristics of the speaker hardware. It is interpreted that whatever data is transmitted contains characteristics of the speaker hardware. Static is defined as either of physics- of or relating to bodies at rest or forces that balance each other; electricity of, relating to, or producing stationary charges; electrostatic and of, relating to, or produced by random radio noise. The applicant needs to clearly state what is meant by static. Therefore, Konno still reads on the claim language and therefore the rejection is maintained.

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Regarding **claim 17**, on page 11, lines 19-21, the applicant asserts that claim 17 is patentably distinguishable over the prior art for reasons applied to claim 3. The rejection is maintained for reasons as applied to claim 3 above.

3. Applicant's arguments with respect to **claims 9-14** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1,2,5, and 6** are rejected under 35 U.S.C. 102(e) as being anticipated by Law (U.S. Patent 6,064,699).

Regarding **claim 1**, Law discloses a wireless speaker system comprising a receiver including an audio signal destination (210) that may refer to a speaker, TV set and other similar acoustic devices and apparatuses (column 4, line 52), which reads on a speaker system operable to generate sound”; and a transmitter (100) including a RF modulator (140) that modulates a phase-locked voltage controlled oscillator to produce a frequency modulated signal (142), the frequency modulated carrier preferably being over 900 MHz. The modulated signal is sent to the RF amplifier (170). In a preferred embodiment, a maximum of five separate audio sources will transmit signals the five audio sources may comprise, the front (right, middle, and left) and the

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rear (right and left) audio signals of a surround sound speaker system (column 1, line 20) It is obvious therefore that the information going into the transmitter contains some speaker characteristics. Thus the RF modulator will be transmitting will also include that information. This reads on "a communication module operable to transmit information to an amplifier in response to a carrier signal, wherein the information includes speaker characteristics". A module is defined a self-contained assembly of electronic components and circuitry. Therefore, Law anticipates all elements of claim 1.

Claim 2 claims the speaker system of claim 1, wherein the communication module transmits information to the amplifier across wires. As stated above apropos of claim 1, Law anticipates all elements of that claim. Therefore Law anticipates all elements of claim 2 with the exception that the communication module transmits information to the amplifier across wires. Figure 1 has lines connecting the elements, which indicates that more than likely there is inherently some sort of wire connection between the RF modulator and the RF amplifier, and although the speaker system itself is wireless, it is inherent that the transmitter itself would be connected by some sort of circuitry. Therefore, Law anticipates all elements of claim 2.

Claim 5 claims the speaker system of claim 1, wherein the communication module has high impedance to avoid placing a load on the speaker that would degrade system performance. As stated above apropos of claim 1, Law anticipates all elements of that claim. Therefore, Law anticipates all elements of claim 4 with the exception of the communication module having high impedance to avoid placing a load on the speaker that would degrade system performance. As stated above apropos of claim 1, Law teaches of a RF modulator. Impedance is an inherent feature of a modulator. Therefore, Law anticipates all elements of claim 5.

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Claim 6 claims the speaker system of claim 1, wherein the communication module communicates via one of the group comprising: amplitude modulation, phase-shift keying and tow-tone modulation. As stated above apropos of claim 1, Law anticipates all elements of that claim. Therefore, Law anticipates all elements of claim 6 with the exception that the communication module communicates via one of the group comprising: amplitude modulation, phase-shift keying and tow-tone modulation. Law further teaches of the analog-to-digital encoder section (Figure 3) of the audio encoder (120) of the transmitter. Figure 3 indicates that CVSD (continuously variable slope delta modulation is used). CVSD is a type of amplitude modulation. The signal that is going into the RF modulator has been CVSD modulated. Therefore, Law anticipates all elements of claim 6.

6. **Claims 9 and 11** are rejected under 35 U.S.C. 102(b) as being anticipated by Larsen (WO 97/25833).

Regarding **claim 9**, Larsen discloses a method of correcting non-linear behavior comprising a power amplifier (10) that sends a signal to the loudspeaker (11). A carrier signal is a communication signal. It is inherent that there is a connection between the amplifier and the speaker system. This reads on “generating a carrier signal from an amplifier to the speaker system through a connection between the amplifier and the speaker system”. He further discloses an estimator (12) that receives voltage across the coil and the current in the coil (See abstract) and uses these signal values to calculate an estimate, which is fed back to the regulator (9) (See Figure 4). The estimator (12) reads on “rectifying power from the carrier signal in a speaker system, wherein the power is used by a communication module”. The regulator reads the “communication module” and thus reads on “transmitting information from the speaker

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system to the amplifier using the communication module at the speaker system for as long as the carrier signal is present in the speaker system”.

Claim 11 claims the method of claim 9 further comprising transmitting information from the amplifier to the speaker system. As stated above apropos of claim 9, Law meets all elements of that claim. Therefore Law meets all elements of claim 10 with the exception of transmitting information from the amplifier to the speaker system. It is inherent, as indicated by Figure 4, that the amplifier transmits information to the speaker system.

7. **Claims 15 and 16** are rejected under 35 U.S.C. 102(e) as being anticipated by Konno (U. S. Patent 6,282,296).

Regarding **claim 15**, Konno discloses an audio reproducing apparatus comprising a speaker unit (14), which reads on “a speaker hardware operable to generate sound from an audio signal received from the speaker connectors”; a high pass filter (17), which reads on “ a high-pass filter operable to pass a high frequency carrier signal received from the speaker connector”, a rectifier (20) that converts the AC signal supplied from the adder to a DC signal and then feeds that to a variable gain circuit, which reads on “a rectifier operable to receive the high frequency carrier signal and convert it to a power signal” The adder adds an output signal from the low-pass filter (18) and the high-pass filter (17); and a variable gain circuit (11) that feeds an output signal to the amplifier (column 2, line 39), which reads on “a communications module operable to receive the power signal from the rectifier and transmit characteristics of the speaker hardware to the amplifier using the speaker connector”. A module is defined a self-contained assembly of electronic components and circuitry. Thus the variable gain circuit is a module.

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It is inherent that there is some connection between the amplifier and the speaker system because the speaker system would not be able to receive the signal if there were no connection. Therefore, Konno anticipates all elements of claim 15.

Claim 16 claims the speaker system of claim 15, wherein the speaker connector connects the speaker system to the amplifier with wires. As stated above apropos of claim 15, Konno anticipates all elements of that claim. Therefore, Konno anticipates all elements of claim 16 with the exception that the speaker connector connects the speaker system to the amplifier with wires. Figure 1 has lines connecting the elements, which indicates that there is inherently a wire connection to all the elements because a wireless connection would not have the lines connecting the elements. Therefore, Konno anticipates all elements of claim 16.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Law (U. S. Patent 6,064,699).

Claim 3 claims the speaker system of claim 1, wherein the communication module transmits information to the amplifier using a wireless connection. As stated above apropos of claim 1, Law anticipates all elements of that claim. Therefore Law anticipates all elements of

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claim 2 with the exception that that the communication module transmits information to the amplifier using a wireless connection. Although Figure 1 of Law's disclosure indicates that there is probably some sort of physical connection through wires between the RF modulator and the RF amplifier, it is obvious that if one wanted wireless communication that all communication could be wireless if desired. Wireless communication is well known in the art and thus it would have been obvious to one of ordinary skill in the art to use wireless communication as the method of transmitting for the benefit of having a more flexible speaker system.

Claim 8 claims the speaker system of claim 1, wherein the information transmitted by the communication module is transmitted in a frequency band that overlaps the audio signal. As stated above apropos of claim 1, Law anticipates all elements of that claim. Therefore, Law anticipates all elements of claim 8 with the exception that the information transmitted by the communication module is transmitted in a frequency band that overlaps the audio signal. It is indicative of the fact the audio signal and the information are being transmitted in the same band. It is obvious that in normal operation that the audio signal and any information would be transmitted in the same frequency band, thus it is obvious to overlap. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Law's transmission system under normal operation for the benefit of having a high-fidelity system.

10. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Law (U. S. Patent 6,064,699) in view of Konno et al. (U. S. Patent (U. S. 282, 296)

Claim 4 claims the speaker system of claim 1, wherein the speaker system further comprises a high-pass filter and rectifier operable to derive output power from the carrier signal. As stated above apropos of claim 1, Law meets all elements of that claim. Therefore Law meets

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all elements of claim 4 with the exception of comprising a high-pass filter and rectifier operable to derive output power from the carrier signal. Konno further teaches of an audio reproducing apparatus comprising high pass filter and a rectifier (20) that converts the AC signal supplied from the adder to a DC signal, the adder adds the signal from the HPF (17) and the LPF (18). Thus the rectifier serves as a source of power. The HPF enables attenuation of the RF signal. Incorporating the HPF and rectifier of Konno's audio reproducing apparatus into the receiver of Law's wireless speaker system reads on "a high pass filter and rectifier operable to derive output power from the carrier signal". It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the features of for the benefit of having a speaker system that can reproduce sound in a noisy environment.

11. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Law (U. S. Patent 6,064,699) in view of Zuquert (U. S. Patent 6,466,832).

Claim 7 claims the speaker system of claim 1, wherein the information transmitted by the communication module is transmitted in a separate frequency band from the audio signal. As stated above apropos of claim 1, Law meets all elements of that claim. Therefore Law meets all elements of claim 7 with the exception of the information transmitted by the communication module is transmitted in a separate frequency band from the audio signal. Law indicates that his disclosed wireless speaker system can have up to five audio sources and five corresponding receivers. Zuquert discloses a two-way wireless speaker system comprising at least two receivers (404 and 406). Comprising receiver units including transmitting units (404 and 406) that both transmit short control messages on a separate frequency band from the digital audio transmissions (column 21, lines 1-10). Zupert's transmitter, (Figure. 2), comprises two VCO's

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(73) which would transmit data to their corresponding amplifiers (75). It is obvious that any information transmitted would be transmitted on a separate frequency than the audio signal. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace at least one of the transmitters of Law's wireless speaker system for the benefit of achieving high fidelity audio transmission.

12. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen (WO 97/25833) in view of Konno (U. S. Patent 6,282,296).

Claim 12 claims the method of claim 9, wherein the transmitting information from the speaker system to the amplifier is accomplished using one of the group comprising: amplitude modulation, phase-shift keying and tow-tone modulation. As stated above apropos of claim 9, Larsen meets all elements of that claim. Therefore, Larsen meets all elements of claim 9 with the exception of the claimed matter. Konno teaches of a variable gain circuit (11) whose output is fed to an amplifier (12) (column 2, lines 41-42). The variable gain circuit (11) having an amplifying rate that varies (column 3, lines 21-25). This is amplitude modulation. It would have been obvious to use Konno's concept of amplitude modulation for the benefit of better masking correction faithful to surrounding noise.

13. **Claim 13** is rejected under 35 U.S.C. 103(b) as being unpatentable over Larsen (WO 97/25833) in view of Setlabudi et al. (U.S. Patent 5,609,487)

Claim 13 claims the method of claim 9, wherein the information is transmitted in a frequency band separate from a frequency band used by an audio signal. As stated above apropos of claim 1, Larsen meets all elements of that claim. Therefore Larsen meets all elements of claim 13 with the exception of the information is transmitted in a frequency band separate

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from a frequency band used by an audio signal. Setlabudi teaches of a high pass filter means adapted to separate a high frequency signal from said audio signal (column 2, lines 9-11) which reads on the claim language. Thus it would have been obvious to one of ordinary skill in the art to use Setlabudi's filter means in Larsen's system for the benefit of transmitting data in a particular frequency range.

14. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen (WO 97/25833).

Claim 14 claims the speaker system of claim 1, wherein the information transmitted by the communication module is transmitted in a frequency band that overlaps the audio signal. As stated above apropos of claim 1, Larsen meets all elements of that claim. Therefore, Larsen meets all elements of claim 14 with the exception of the claimed matter. It is obvious that in normal operation that the audio signal and any information would be transmitted in the same frequency band, thus it is obvious that overlapping is present. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Larsen's system for the benefit of having a system that is less susceptible to temperature variations.

15. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable by Konno (U. S. Patent 6,282,296).

Claim 17 claims the speaker system of claim 15 wherein the speaker connector connects the speaker to the amplifier using a wireless connection. As stated above apropos of claim 15, Konno anticipates all elements of that claim. Therefore Konno anticipates all elements of claim 17 with the exception of the speaker connector connecting the speaker to the amplifier using a wireless connection. Wireless communication is well known in the art and thus it would have

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been obvious to one of ordinary skill in the art to use wireless communication as the method of connecting the speaker to the amplifier for the benefit of having a more flexible speaker system.

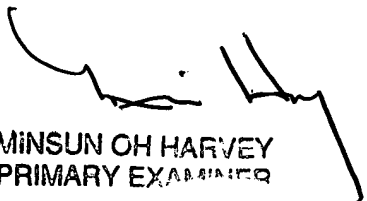
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

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MINSUN OH HARVEY
PRIMARY EXAMINER